

**402 QUESTIONS FOR THE FEDERAL AVIATION ADMINISTRATION: THE ACTIVITIES OF THE ENVIRONMENTAL ISSUES
SUBCOMMITTEE OF THE SPACEPORT CAMDEN STEERING COMMITTEE**

A presentation given September 13, 2016 by
Clay L. Montague, Ph.D.

Chair, Environmental Issues Subcommittee of the Spaceport Camden Steering Committee
A Committee Designated by the Camden County Board of Commissioners, Georgia

Background and Subcommittee Formation:

Spaceport Camden is a project to construct a commercial spaceport in Camden County, Georgia originally conceived in 2012 by the Camden County Joint Development Authority (News section in Spaceport Camden 2016). In 2015 the Camden County Board of Commissioners applied for a Launch Site Operator License from the Federal Aviation Administration (FAA) (Federal Register 2015). An Environmental Impact Statement (EIS) for Spaceport Camden, now being performed for the FAA by Leidos Inc., is a required part of the launch-site licensing process (Federal Aviation Administration 2016a).

To assist the county with the environmental review process for the proposed spaceport, in October 2015 the Camden County Board of Commissioners formed the Environmental Issues Subcommittee of the Spaceport Camden Steering Committee (News section in Spaceport Camden 2016). On November 6th, 2015, the FAA filed a Notice of Intent to perform an EIS for Spaceport Camden (Federal Register 2015).

Composition:

The Environmental Issues Subcommittee consists of ten environmental and community leaders active in Camden County (Table 1). Members include leaders of nonprofit environmental organizations, directors of environmental management programs, an environmental lawyer, and property owners on Cumberland Island and Little Cumberland Island, islands immediately downrange of the currently proposed launch site. The members have active projects or property in Camden County and adjacent areas.

Purpose:

The purpose of the Environmental Issues Subcommittee is to help the citizens and leaders of Camden County participate effectively in the environmental aspects of the FAA's spaceport licensing process. Central to this effort is public involvement in the Environmental Impact Statement (EIS). Significant public input to the EIS can occur during the Public Scoping Period held before the Draft EIS is prepared, and in the Public Comment Period after the Draft EIS is released.

A 73 day Public Scoping Period occurred from November 6th, 2015 through January 18th, 2016. A Public Scoping Meeting was held in Camden County on December 7th, 2015.

According to the President's Council on Environmental Quality which sets the regulations for environmental impact statements, public scoping is the mechanism by which a federal agency can hear from citizens with "*valuable information about places and resources that they value and the potential*

environmental, social, and economic effects that proposed federal actions may have on those places and resources” (Council on Environmental Quality, 2007).

During the public scoping period, the Environmental Issues Subcommittee compiled, examined, and interpreted local environmental concerns with the proposed spaceport. On January 4th, 2016 the Subcommittee transmitted the interpretations to the FAA in the form of a lengthy series of questions.

Eventually, upon release of the Draft EIS, the Environmental Issues Subcommittee will read, comment, and help interpret it for the citizens and leaders of Camden County. Typically, a 45 day public comment period will occur once the Draft EIS is released (a date has not been announced). The evaluation of the Draft EIS will be done in the context of the requirements delineated in the 16 topic areas covered in the FAA’s *1050.1F Desk Reference* for environmental reviews (Federal Aviation Administration 2015), using the advice contained within *A Citizens Guide to the NEPA* (Council on Environmental Quality 2007), and the Environmental Law Institute’s *The Art of Commenting* (Mullin 2013).

The Environmental Issues Subcommittee will not evaluate nor analyze the environmental concerns raised by the public. That is the job of the FAA’s EIS consulting team.

The Subcommittee will continue likewise with other related documents pertaining to the environmental aspects of the launch site licensing process as desired by the Camden County Board of Commissioners.

A Completed Product of the Environmental Issues Subcommittee:

The document developed by the Environmental Issues Subcommittee and transmitted to the FAA contained 402 questions (Environmental Issues Subcommittee 2016). Questions were organized into 29 topics. Also included were the names and contact information of relevant professionals with specific knowledge of the environmental history and resources of the proposed launch site and vicinity. Forty-two environmental professionals allowed their names to be included, some under more than one topic.

The subcommittee developed the document by listening to the environmental concerns of residents and visitors of Camden County, members and leaders of environmental organizations, and environmental professionals with knowledge of the proposed site and the resources in the surrounding areas. Members of the subcommittee then translated the issues raised into questions that environmental professionals or other technical experts should be able to answer.

The subcommittee was only one source of comments about Spaceport Camden sent to the FAA. The FAA reported 909 separate submissions, only one of which was the 402 questions received from the Environmental Issues Subcommittee. All the submissions are posted online (Federal Aviation Administration 2016b).

The Nature of the Questions Submitted:

An environmental impact statement addresses a very broad range of issues (Table 2). Sixteen of the 29 topics holding the 402 questions refer to chapters in the FAA’s environmental desk reference (Federal Aviation Administration 2015). Other questions either did not seem to fit a chapter, or could be placed in more than one. These others are organized under 13 additional topics (Table 3).

The rich variety of questions reflects careful thought given to the spaceport proposal by many people in the community. Answers will supply much needed information for professionals and citizens to evaluate the risks and benefits of Spaceport Camden.

Several thrusts are apparent among the 402 questions. Launch safety and inconvenience is a major focus. A fundamental question requests a firm statement about the allowable directions of launch trajectories. The allowed launch paths determine who will have to relocate during launches and endure the attendant safety hazards. The experimental nature of vertical landings proposed for the site adds to the apprehension about launch direction. Concern over the possibility of allowing radioactive or otherwise dangerous payloads is also evident. Financial responsibility and liability for damage and inconvenience are raised. Effects on tourism, especially visits to Cumberland Island and Jekyll Island are of interest, including the management of launch spectators. Questions are also raised about the consequences for any person refusing to leave an exclusion zone during a launch.

Among other categories of concern are the status and eventual fate of existing hazardous wastes from the former chemical manufacturing industries at the site. Known hazards include: an unlined toxic landfill that currently contaminates shallow groundwater; unexploded ordnance; and the possibility that all such hazards are not yet located or revealed by current property owners (Bayer Crop Science and Union Carbide).

Besides these existing hazards, concerns include storage and disposal of hazardous substances brought to the site for spaceport operations. Linked to these concerns is anxiety about release of hazardous chemicals from vibrations, sonic booms, and catastrophic explosions or crashes at the spaceport. Fear of contaminating drinking water, direct exposure to poisonous air and water, fire, and damage to fish and wildlife is expressed in a number of questions.

Historical, cultural, archeological, and architectural resources account for a large number of questions. Many Native American artifacts have been found at the site, and evidence of early European visitation and mapping, plantation era history, and tabby building foundations are present. Memory of a deadly industrial explosion at this site is frequently recounted along with hope for a memorial to be established at the site.

A wide range of other questions are in the document. A sample includes those that ask if nearby popular fishing and hunting areas might be made off limits for security reasons. Others ask if public use of the site will be allowed between launches, thereby increasing opportunities for recreation with bike lanes, walking trails, boat ramps, gardens, and visitor education facilities. Still others focus on whether lighting from the spaceport will interfere with sea turtle nesting success or with observation of the night sky by astronomy enthusiasts. Damage to wetlands and ecosystem services is questioned with particular focus on effects of groundwater withdrawal, waste discharges, and habitat fragmentation. Some questions pertain to the effect of noise both on hearing loss and on wildlife use of nearby habitat. The effect of hurricanes and rising sea level is questioned not only for spaceport operations but also for the fate of the existing hazardous waste disposal areas, a relevant concern whether or not a spaceport is built.

A number of questions involve economic activity and the effect of spaceport operations on local traffic, especially in Woodbine and Harrietts Bluff. Questions are voiced about effects on commerce, land development, property values, taxes, urban sprawl, job opportunities, and business economic gains and

losses in the vicinity. Facts about the portion of public and private financing of spaceport construction and operations are requested, including identifying responsibility for water supply and wastewater infrastructure. Related questions involve comparing the economic risks and benefits in Camden County with those likely to accrue in surrounding counties or out of state in nearby Florida.

The no-action alternative stimulated some unique questions. Particular concerns involve a comparison with and without a spaceport of such things as future land ownership, future land use, property values, potential for wildlife conservation, groundwater use, regional economic development, and likelihood of the continuation of hazardous chemical manufacturing or other polluting industries at the site. Similar questions involve estimating a reasonable design life of a spaceport and subsequent disposition of the property.

General questions include whether a spaceport authority would be established to schedule use of launch facilities by competing commercial space enterprises, and manage associated fees and permits, similar to the role of the Georgia Ports Authority. Finally, a request is made to outline the process by which a launch site license might be modified in the future to allow more launches or larger payloads than originally licensed.

Some Questions May Remain:

Even with the great breadth of coverage in an EIS, some concerns may be beyond its scope. Certain questions may not be answered. Some of those not answered in the EIS will undoubtedly be addressed elsewhere in the licensing process. Others may not. So the first question in the list of 402 recognizes that the FAA may not be able to answer all the questions, and asks them to suggest likely sources for answers.

Other documents involved in a launch-site license will have some answers. The FAA must do a launch site policy review, and a launch site safety review in addition to the EIS (Federal Aviation Administration 2016a). Questions of national security, foreign policy, international obligations, and basic launch safety are covered in those assessments.

Even with those additional reviews, some issues raised in the Environmental Issues Subcommittee document may not be covered anywhere in the launch-site licensing process. Instead, some may be covered in future individual launch and reentry licenses. According to the Federal Aviation Administration (2016a), in addition to a launch-site license, every launch and re-entry from a licensed spaceport requires its own license, including safety, environmental, and other reviews and approvals. Liability for damage from a given launch and any launch-specific environmental impacts are determined in each launch license.

Some feasibility and economic impact questions may not be answered at all by the FAA. To license a commercial spaceport, the FAA does not appear to require an economic feasibility analysis, nor an economic impact assessment. Questions about economic risks and benefits, financing, or job creation would then not be subjects of a spaceport license application. These concerns would require separate efforts. However, the direct and indirect socio-economic impacts of environmental damage and mitigation should be covered in the EIS, so it remains to be seen how all the socio-economic questions raised will be addressed.

Moreover, it seems unclear whether certain ancillary impacts such as those involving offsite transportation facilities, new access roads, road improvements, rail service, barge ports, and channel dredging necessary for spaceport operations are to be covered in this EIS. Although such impacts also require environmental review, they may fall outside the EIS for the launch site itself. If allowed, some ancillary assessments may be tiered, covered as construction plans develop, with supplemental impact statements provided at a later time.

For these reasons the anticipated Draft EIS may not answer all questions submitted to the FAA by the Environmental Issues Subcommittee. In that case, other sources for the answers will be needed.

Anticipated Impact of the 402 questions:

Thanks to substantial public input, the citizens and leadership of Camden County and all others evaluating Spaceport Camden can expect to benefit greatly from the answers to the questions forwarded to the FAA by the Environmental Issues Subcommittee and independently. Regardless of the source of answers, a complete set should provide much evidence on which to base good decisions. Findings will involve not only whether the proposed site can be licensed for a spaceport, but also how a spaceport can be safely constructed, environmental damage mitigated, and economic benefits managed to exceed investment risk.

On the other hand, if a launch site license cannot be issued based on the environmental, safety, and policy reviews performed by the FAA, the EIS process will nevertheless provide valuable indications for the current status and appropriate future uses and management of the site. So in conclusion, many of us involved in the process anticipate that much will be learned of value to the citizens of Camden County and those involved with the commercial space industry in Georgia.

References:

- Council on Environmental Quality. 2007. *A Citizen's Guide to the NEPA: Having Your Voice Heard*. https://ceq.doe.gov/publications/citizens_guide_to_nepa.html (last accessed 04 Sep 2016).
- Environmental Issues Subcommittee. 2016. *Questions that Relay Certain Local Concerns about Spaceport Camden to the Federal Aviation Administration for Consideration in the Environmental Impact Statement, Revision 5* (04 January 2016). Environmental Issues Subcommittee of the Spaceport Camden Steering Committee (A subcommittee appointed by the Camden County Board of Commissioners, October 2015). 28 pages. Pages 166-193 in *Individual Scoping Comments Part 3 Redacted 508*. Available online from the FAA at https://www.faa.gov/about/office_org/headquarters_offices/ast/environmental/nepa_docs/review/documents/progress/camden_spaceport/media/Individual_Scoping_Comments_Part3_Redacted_508.pdf (last accessed 05 Sep 2016).
- Federal Aviation Administration. 2015. *1050.1F Desk Reference*. [Provides necessary guidance for environmental reviews performed by the FAA]. https://www.faa.gov/about/office_org/headquarters_offices/apl/enviro_policy_guidance/policy/faq_nepa_order/desk_ref/ (last accessed 04 Sep 2016).
- Federal Aviation Administration. 2016a. *Office of Commercial Space Transportation: Licenses, Permits & Approvals*. Includes links to licensing procedures for launch sites and for individual launches and reentries. http://www.faa.gov/about/office_org/headquarters_offices/ast/licenses_permits/ (last accessed 05 Sep 2016).

- Federal Aviation Administration. 2016b. *Spaceport Camden Environmental Impact Statement*. [A depository of ongoing progress with links to completed products].
http://www.faa.gov/about/office_org/headquarters_offices/ast/environmental/nepa_docs/review/documents/progress/camden_spaceport/ (last accessed 04 Sep 2016).
- Federal Register. 2015. Document Citation: 80 FR 68893, Document Number 2015-28336, Date 06 Nov 2015. *Office of Commercial Space Transportation; Notice of Intent To Prepare an Environmental Impact Statement (EIS), Open a Public Scoping Period, and To Hold a Public Scoping Meeting in Camden County, Georgia*. <https://federalregister.gov/a/2015-28336> (last accessed 04 Sep 2016).
- Mullin, Elizabeth D. 2013. *The Art of Commenting: How to Influence Environmental Decisionmaking with Effective Comments* (2nd Edition). Washington DC: Environmental Law Institute. 72 pages. Described at <http://www.eli.org/eli-press-books/art-commenting-how-influence-environmental-decisionmaking-effective-comments-2d-edition> (last accessed 04 Sep 2016).
- Spaceport Camden. 2016. *Spaceport Camden: America's Gateway to Commercial Space*.
<http://spaceportcamden.us/> (last accessed 04 Sep 2016).

Table 1. Members of the Environmental Issues Subcommittee of the Spaceport Camden Steering Committee, designated in October 2015 by the Camden County Board of Commissioners

- **Clay Montague**, Chair, Environmental consultant & resident of Camden County
- **David Ball**, Cumberland Island property owner and resident of Statesboro
- **Ben Carswell**, Jekyll Island Authority and resident of Jekyll Island
- **Megan Desrosiers**, Executive Director, One Hundred Miles
- **Alex Kearns**, Executive Director, St Marys Earthkeepers
- **Philip Fortune**, Lawyer and resident of St Simons Island
- **Charles McMillan**, Coastal Director, Georgia Conservancy
- **Russell Regnery**, Property owner, Little Cumberland Island & Director of its Sea Turtle Project
- **Mark Risse**, Director, UGA Marine Extension & Georgia Sea Grant
- **Ashby Nix Worley**, Satilla Riverkeeper & Executive Director, Satilla RiverWatch Alliance, Inc.

Table 2. Sixteen topics covered in an EIS according to the FAA's *1050.1F Desk Reference* (Federal Aviation Administration 2015). Many questions were grouped under these topics by the Environmental Issues Subcommittee:

- Air quality (15 questions)
- Biological Resources (rare and endangered species, habitat management, fishery resources, outdoor recreation) (59 questions)
- Climate, including anticipated sea level rise (7 questions)
- Coastal resources, such as barrier islands, and natural resources under coastal zone management (3 questions)
- Use of publicly owned parks, wildlife refuges, recreation areas, historic sites, etc. (1 question)
- Farmlands (3 questions)
- Hazardous materials, waste, and pollution prevention (53 questions)
- Historical, architectural, archeological, and cultural resources (19 questions)
- Land use (3 questions)
- Natural resources and energy supply (8 questions)
- Noise and noise-compatible land use (10 questions)
- Socioeconomics, environmental justice, and children's environmental health and safety risks (10 questions)
- Visual effects (2 questions)
- Water resources (surface and ground water supply and quality, wetlands, floodplains, wild and scenic rivers) (26 questions)
- Cumulative impacts (2 questions)
- Irreversible and irretrievable commitment of resources (3 questions).

Table 3. Additional topics under which some questions were grouped by the Environmental Issues Subcommittee.

- General questions about the licensing process (23 questions)
- Evacuation inconvenience and business suspension during launches and landings (25 questions)
- Launch safety and liability (57 questions)
- Private property values (3 questions)
- Coastal engineering (3 questions)
- General development impacts (6 questions)
- Recreation, tourism, and quality of life (7 questions)
- Traffic and transportation (14 questions)
- Commerce (2 questions)
- Design life of spaceport and its impacts (4 questions)
- Balance between economic gain and environmental loss (20 questions)
- Opportunity cost [of the no-action alternative] (13 questions)
- Business model (1 question)